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CLM PTO 09/14/04

CLAIMS

1. An optical material comprising at least one aromatic sulfide compound represented by the following formula (1):

$$A - \left(-S - B^{k} \right)_{n} \tag{1}$$

wherein

n stands for an integer of from 2 to 12,

k stands for an integer of from 1 to n,

A represents a substituted or unsubstituted, n-valent carbocyclic aromatic ring or heterocyclic aromatic ring, and

 B^1 to B^n each independently represent a substituted or unsubstituted, carbocyclic aromatic group or heterocyclic aromatic group.

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- 2. An optical material according to claim 1, wherein in formula (1), n stands for an integer of from 2 to 4, and A is a substituted or unsubstituted, heterocyclic aromatic ring.
- 3. An optical material according to claim 2, wherein in formula (1), B¹ to Bⁿ each independently are a substituted or unsubstituted phenyl group, a substituted or unsubstituted pyrimidyl group, a substituted or unsubstituted naphthyl group, a substituted or unsubstituted thienyl group, a substituted or unsubstituted thienyl group, a substituted or unsubstituted benzothiazolyl group, a substituted or

unsubstituted benzoxazolyl group, a substituted or unsubstituted thiadiazolyl group, or a substituted or unsubstituted thiazolyl group.

4. An optical material according to claim 2, wherein in formula (1), A is a divalent heterocyclic aromatic ring selected from a substituted or unsubstituted thiophene ring, a substituted or unsubstituted thiophene-1,1-dioxide ring, a substituted or unsubstituted thiophenethiadiazole ring, a substituted or unsubstituted thieno[3,2,-b]thiophene ring, a substituted or unsubstituted triazine ring, or a substituted or unsubstituted pyrimidine ring.

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- 5. An optical material according to claim 4, wherein in formula (1), B¹ to Bⁿ each independently are a substituted or unsubstituted phenyl group, a substituted or unsubstituted pyrimidyl group, a substituted or unsubstituted naphthyl group, a substituted or unsubstituted thienyl group, a substituted or unsubstituted benzothiazolyl group, a substituted or unsubstituted benzoxazolyl group, a substituted or unsubstituted thiadiazolyl group, or a substituted or unsubstituted thiadiazolyl group, or a substituted or unsubstituted thiadiazolyl group.
- 6. An optical material according to claim 2, wherein in formula (1), A is a trivalent heterocyclic aromatic ring selected from a substituted or unsubstituted thiophene ring, a substituted or

unsubstituted triazine ring, or a substituted or unsubstituted pyrimidine ring.

7. An optical material according to claim 6, wherein in formula (1), B¹ to Bⁿ each independently are a substituted or unsubstituted phenyl group, a substituted or unsubstituted pyrimidyl group, a substituted or unsubstituted naphthyl group, a substituted or unsubstituted thienyl group, a substituted or unsubstituted benzothiazolyl group, a substituted or unsubstituted benzoxazolyl group, a substituted or unsubstituted thiadiazolyl group, or a substituted or unsubstituted thiadiazolyl group, or a substituted or unsubstituted thiadiazolyl group.

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- 8. An optical material according to claim 2, wherein in formula (1), A is a tetravalent heterocyclic aromatic ring selected from a substituted or unsubstituted thiophene ring or a substituted or unsubstituted thieno[3,2,-b]thiophene ring.
- 9. An optical material according to claim 8, wherein in formula (1), B¹ to Bⁿ each independently are a substituted or unsubstituted phenyl group, a substituted or unsubstituted pyrimidyl group, a substituted or unsubstituted naphthyl group, a substituted or unsubstituted thienyl group, a substituted or unsubstituted benzothiazolyl group, a substituted or unsubstituted benzothiazolyl group, a substituted or unsubstituted benzoxazolyl group, a substituted or unsubstituted thiadiazolyl group, or a substituted or

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unsubstituted thiazolyl group.

- 10. An optical material according to claim 1, wherein in formula (1), n stands for an integer of from 2 to 6, and A is a substituted or unsubstituted, carbocyclic aromatic ring.
- 11. An optical material according to claim 10, wherein in formula (1), B¹ to Bⁿ each independently are a substituted or unsubstituted phenyl group, a substituted or unsubstituted pyrimidyl group, a substituted or unsubstituted naphthyl group, a substituted or unsubstituted thienyl group, a substituted or unsubstituted benzothiazolyl group, a substituted or unsubstituted benzoxazolyl group, a substituted or unsubstituted thiadiazolyl group, or a substituted or unsubstituted thiadiazolyl group, or a substituted or unsubstituted thiadiazolyl group.

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- 12. An optical material according to claim 10, wherein in formula (1), A is a divalent carbocyclic aromatic ring selected from a substituted or unsubstituted benzene ring, a substituted or unsubstituted naphthalene ring, a substituted or unsubstituted fluorene ring, or a substituted or unsubstituted biphenyl group.
- 13. An optical material according to claim 12, wherein in formula (1), B¹ to Bⁿ each independently are a substituted or unsubstituted phenyl group, a substituted or unsubstituted pyrimidyl group, a substituted or

unsubstituted naphthyl group, a substituted or unsubstituted thienyl group, a substituted or unsubstituted benzothiazolyl group, a substituted or unsubstituted benzoxazolyl group, a substituted or unsubstituted thiadiazolyl group, or a substituted or unsubstituted thiadiazolyl group, or a substituted or unsubstituted thiazolyl group.

14. An optical material according to claim 10, wherein in formula (1), A is a trivalent carbocyclic aromatic ring selected from a substituted or unsubstituted benzene ring or a substituted or unsubstituted fluorene ring.

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- 15. An optical material according to claim 14, wherein in formula (1), B¹ to Bⁿ each independently are a substituted or unsubstituted phenyl group, a substituted or unsubstituted pyrimidyl group, a substituted or unsubstituted naphthyl group, a substituted or unsubstituted thienyl group, a substituted or unsubstituted benzothiazolyl group, a substituted or unsubstituted benzoxazolyl group, a substituted or unsubstituted thiadiazolyl group, or a substituted or unsubstituted thiadiazolyl group, or a substituted or unsubstituted thiadiazolyl group.
- 16. An optical material according to claim 10, wherein in formula (1), A is a tetravalent carbocyclic aromatic ring selected from a substituted or unsubstituted benzene ring or a substituted or unsubstituted biphenyl group.

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17. An optical material according to claim 16, wherein in formula (1), B¹ to Bⁿ each independently is a substituted or unsubstituted phenyl group, a substituted or unsubstituted pyrimidyl group, a substituted or unsubstituted naphthyl group, a substituted or unsubstituted thienyl group, a substituted or unsubstituted benzothiazolyl group, a substituted or unsubstituted benzoxazolyl group, a substituted or unsubstituted thiadiazolyl group, or a substituted or unsubstituted thiadiazolyl group.

18. (Amended) An optical material according to claim 1, which is a polymer optical fiber material.

- 20. An optical part according to claim 19, which is a GI polymer optical fiber.
- 21. An aromatic sulfide compound represented by the following formula (la):

$$A - \left(-S - B^{k} \right)_{2}$$
 (1a)

wherein

k stands for an integer of from 1 to 2,

A represents a divalent carbocyclic aromatic ring or heterocyclic aromatic ring selected from a substituted or unsubstituted benzene ring, a substituted or unsubstituted naphthalene ring, a substituted or

unsubstituted fluorene ring, a substituted or unsubstituted biphenyl ring, a substituted or unsubstituted thiophene ring, a substituted or unsubstituted thiophene-1,1-dioxide ring, a substituted or unsubstituted thiophenethiadiazole ring, a substituted or unsubstituted thieno[3,2,-b]thiophene ring, a substituted or unsubstituted triazine ring, or a substituted or unsubstituted pyrimidine ring, and

B¹ to Bn each independently represent a carbocyclic aromatic group or heterocyclic aromatic group selected from a substituted or unsubstituted phenyl group, a substituted or unsubstituted pyrimidyl group, a substituted or unsubstituted naphthyl group, a substituted or unsubstituted thienyl group, a substituted or unsubstituted thienyl group, a substituted or unsubstituted benzothiazolyl group, a substituted or unsubstituted benzoxazolyl group, a substituted or unsubstituted thiadiazolyl group, or a substituted or unsubstituted thiadiazolyl group.

22. An aromatic sulfide compound represented by the following formula (1b):

$$A - \left(-S - B^{k} \right)_{3}$$
 (1b)

wherein

k stands for an integer of from 1 to 3,

A represents a trivalent carbocyclic aromatic ring or heterocyclic aromatic ring selected from a substituted

or unsubstituted benzene ring, a substituted or unsubstituted fluorene ring, a substituted or unsubstituted thiophene ring, a substituted or unsubstituted triazine ring, or a substituted or unsubstituted pyrimidine ring, and

B¹, B² and B³ each independently represent a carbocyclic aromatic group or heterocyclic aromatic group selected from a substituted or unsubstituted phenyl group, a substituted or unsubstituted pyrimidyl group, a substituted or unsubstituted naphthyl group, a substituted or unsubstituted thienyl group, a substituted or unsubstituted benzothiazolyl group, a substituted or unsubstituted benzoxazolyl group, a substituted or unsubstituted thiadiazolyl group, or a substituted or unsubstituted thiadiazolyl group.

23. An aromatic sulfide compound represented by the following formula (1c):

$$A - \left(-S - B^{k} \right)_{4}$$
 (1c)

wherein

k stands for an integer of from 1 to 4,

A represents a carbocyclic aromatic ring or heterocyclic aromatic ring selected from a substituted or unsubstituted benzene ring, a substituted or unsubstituted biphenyl ring, a substituted or unsubstituted thiophene ring, a substituted or

unsubstituted thieno[3,2,-b]thiophene ring, and

B¹, B², B³ and B⁴ each independently represent a carbocyclic aromatic group or heterocyclic aromatic group selected from a substituted or unsubstituted phenyl group, a substituted or unsubstituted pyrimidyl group, a substituted or unsubstituted naphthyl group, a substituted or unsubstituted thienyl group, a substituted or unsubstituted benzothiazolyl group, a substituted or unsubstituted benzothiazolyl group, a substituted or unsubstituted thiadiazolyl group, or a substituted or unsubstituted thiadiazolyl group, or a substituted or unsubstituted thiadiazolyl group.